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A PERIMETRIST'S GUIDE FOR OPTIC DISC VISUAL FIELD

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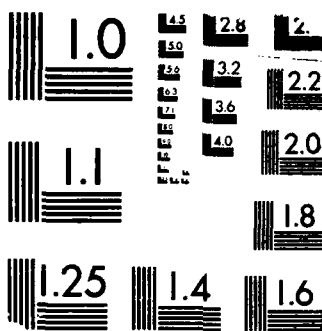
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**ANALYSIS OF THE EFFECTS OF OPTIC
AND VISUAL FIELD SCREENING:
THE ANNALY-ORANGE METHOD**

**DR. W. G. GILSON, Captain, USAF, MC
LAWRENCE TYGHEM, Major, USAF, MC**

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NOTICES

This progress report was submitted by personnel of the Ophthalmology Branch, Medical Sciences Division, USAF School of Aerospace Medicine, Human Factors Division, AFSC, Brooks Air Force Base, Texas, under job order 7755-

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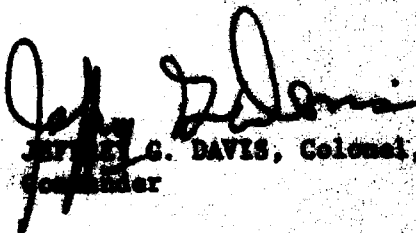
This report has been reviewed and is approved for publication.



DEAN W. CARLSON, Captain, USAF, MC
Project Scientist



ROBERT S. OLSON, JR., Colonel, USAF, MC
Supervisor



JEFFREY C. DAVIS, Colonel, USAF, MC
Commander

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Disc-related defects constitute over 90% of field defects found in typical outpatient clinical population--e.g., ischemic neuropathy, optic neuritis, glaucoma. This handout is designed for anyone who uses a Goldman Visual Field Perimeter. It describes an efficient standardized screening examination that, when mastered, should take the ophthalmologist, ophthalmology resident, and experienced or inexperienced ophthalmic technician only 5 to 10 minutes per eye to perform. The technique, developed by Armaly and modified by Drance, is a combination of kinetic and suprathreshold static perimetry. Detection of disc-related field defects has been shown to improve to 95% after a single day of instruction in the Armaly-Drance method.					
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A PERIMETRIST'S GUIDE FOR OPTIC DISC VISUAL FIELD SCREENING :
THE ARMALY - DRANCE METHOD

INTRODUCTION

Disc-related defects constitute over 90% of field defects found in a typical outpatient clinic population--e.g., ischemic neuropathy, optic neuritis, glaucoma.

This paper will teach anyone who uses a Goldman visual field perimeter to use it better. It describes an efficient standardized screening examination that, when mastered, should take the ophthalmologist, ophthalmology resident, and experienced or inexperienced ophthalmic technician only 5 to 10 min per eye to perform.

The technique, developed by Armaly (2) and modified by Drance (3), is a combination of kinetic and suprathreshold static perimetry.

While this is an accurate test, the quality of any visual field examination is only as good as the care taken by the perimetrist.

Detection of disc-related field defects has been shown to improve to 95% after a single day of instruction in the Armaly-Drance method.



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GENERAL CONSIDERATIONS

- Use the perimeter in a completely dark room, free from distractions. It must be calibrated each day before it is used.
- Explain the test clearly and firmly. Fixation must be stressed. The patient should be comfortable.
- Tell the patient to use "tapping" or other nonverbal signals. Do not let the patient talk.
- Start the examination with the best eye, if known.
- Use an accurate refraction. Correct for astigmatism greater than 0.75 diopters.
- Use the appropriate near addition for the central (25°) field. The following are estimates:

30-39 years old	+1.0 sph
40-44 years old	+1.5 sph
45-49 years old	+2.0 sph
50-54 years old	+2.5 sph
55-60 years old	+3.0 sph
Over 60 years	+3.5 sph

- Determine the correct lens to use by placing a near reading card in the bowl.
- Use narrow rim trial lenses if available. Touch the lenses to the patient's brow.
- Follow a systematic approach; but, at the same time, avoid getting into a rhythm.
- Rest after each 10 to 15 min of testing.
- Record all details of the examination, including the patient's name, examiner, date, pupillary size, corrections used, target size, etc. Also evaluate the patient's reliability. Without this vital information, your visual field is of little use to the patient or to the ophthalmologist.

STATIC PRESENTATIONS

- Avoid getting into a rhythm.
- Use presentations of 1 sec duration ("on-one thousand-off").
- Retest all misses.
- If missed twice, then record with an open circle.
- If missed three times, then search the area kinetically for the extent of the scotoma.

KINETIC PRESENTATIONS

- Pause after the initial presentation to make sure the patient can't see the target.
- Move the target at 4 degrees per second until it is seen ("line-one-thousand-two-one-thousand-line").
- Avoid following the horizontal and vertical meridians.

THE ARMALY - DRANCE METHOD

1. Determine a stimulus that is above threshold at 25°.

With the appropriate refractive add for near correction in position, place the target 15° above and below the temporal horizontal meridian at 25° from fixation (Fig. 1). If the target is not seen, then increase intensity (I 3e to I 4e) or size (I 4e to II 4e).

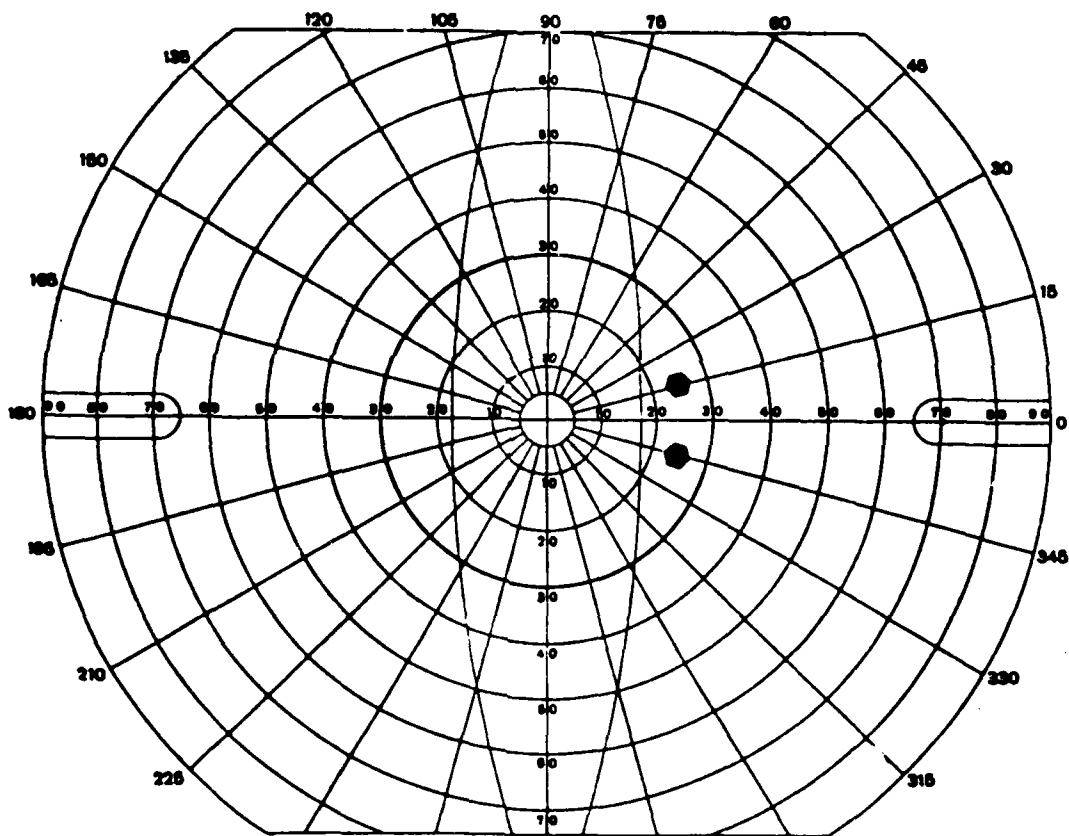


Figure 1

os. (20)

II. Map the blind spot.

Use the same stimulus and map the blind spot kinetically in eight directions (Fig. 2) to familiarize the patient with the test and also to detect enlargement of the blind spot.

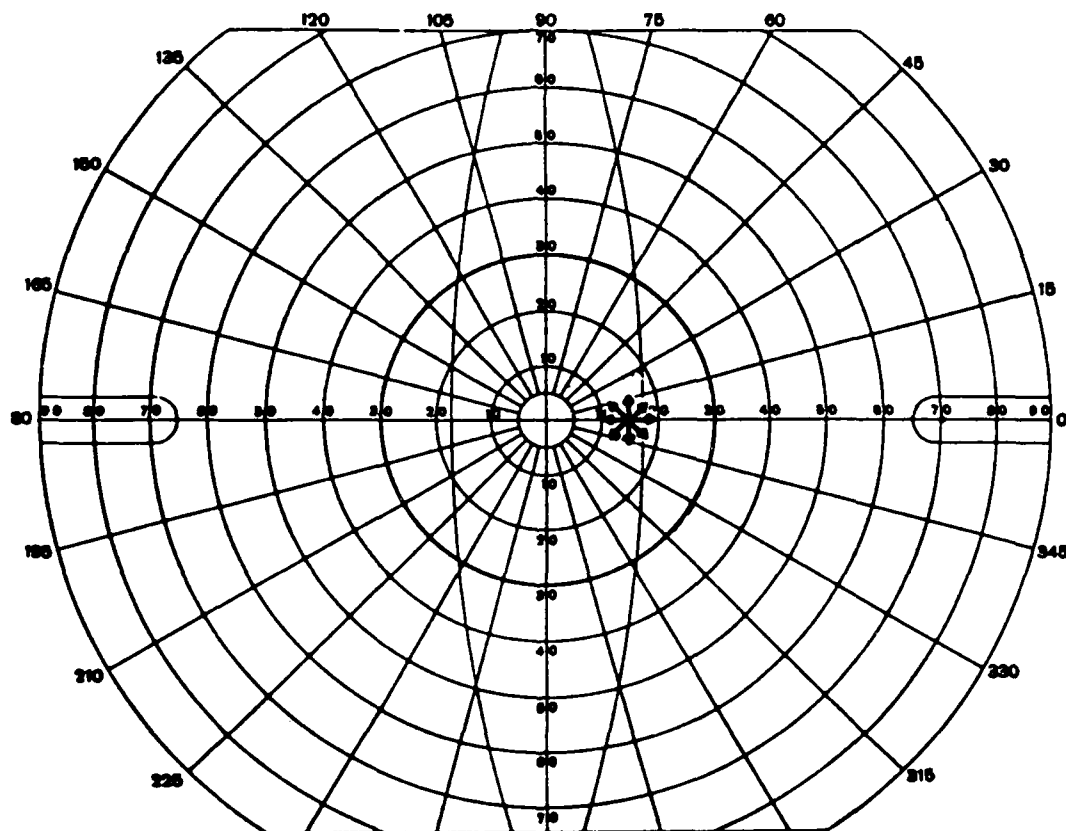


Figure 2

os. (D)

III. Try to detect the four main defects.

1. Para-central scotomas (central, cecocentral, and arcuate)

Using the same stimulus, statically check at 5°, 10°, 15°, along each 15° meridian (Fig. 3). You will detect over 75% of the earliest visual field defects if you do this correctly.

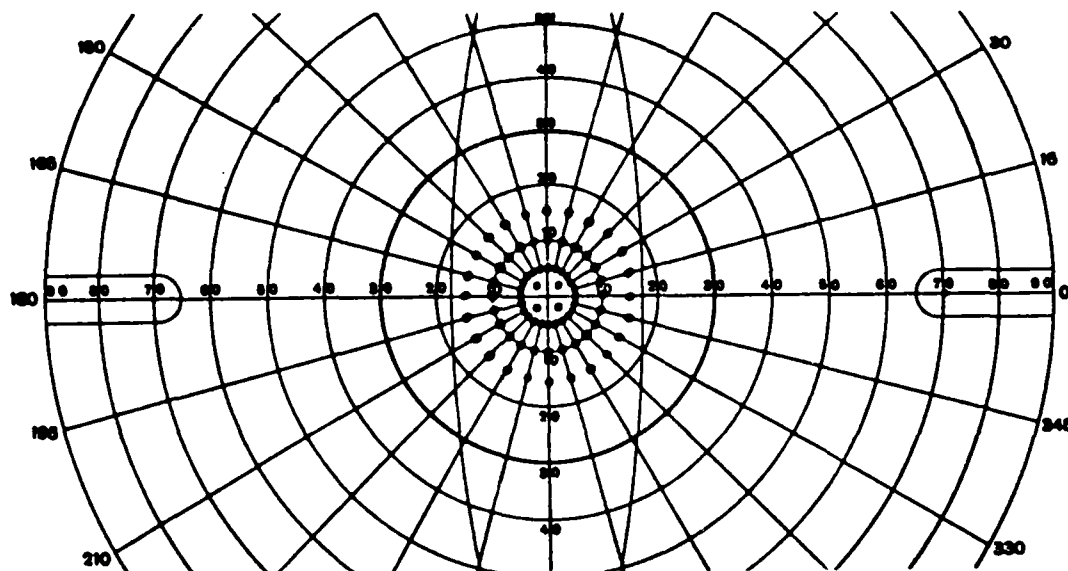


Figure 3

os. 50

2. Nasal step in the central field

Again, use the same stimulus and determine kinetically the nasal isopter at 5°, 10°, 15°, and 30°, above and below the nasal horizontal meridian (Fig. 4).

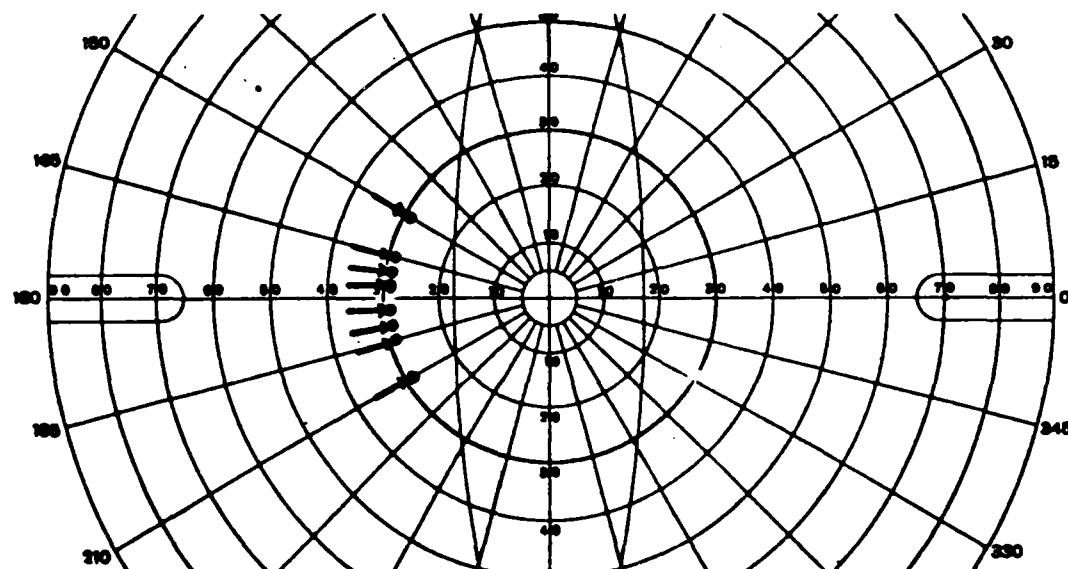


Figure 4

os. 50

3. Nasal step in the peripheral field

Remove all corrective lenses. Place the I 4e target at 70° on the temporal side (Fig. 5). If not seen, then increase target size (II 4e, III 4e).

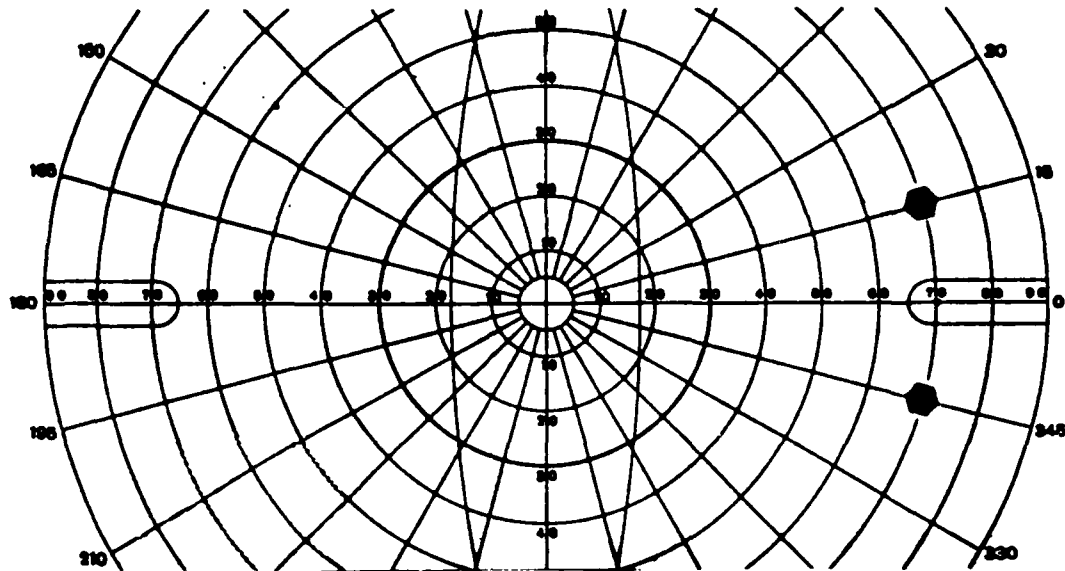


Figure 5

OS. (50)

Kinetically map the nasal isopter at 5°, 10°, 15°, and 30° above and below the nasal horizontal meridian (Fig. 6).

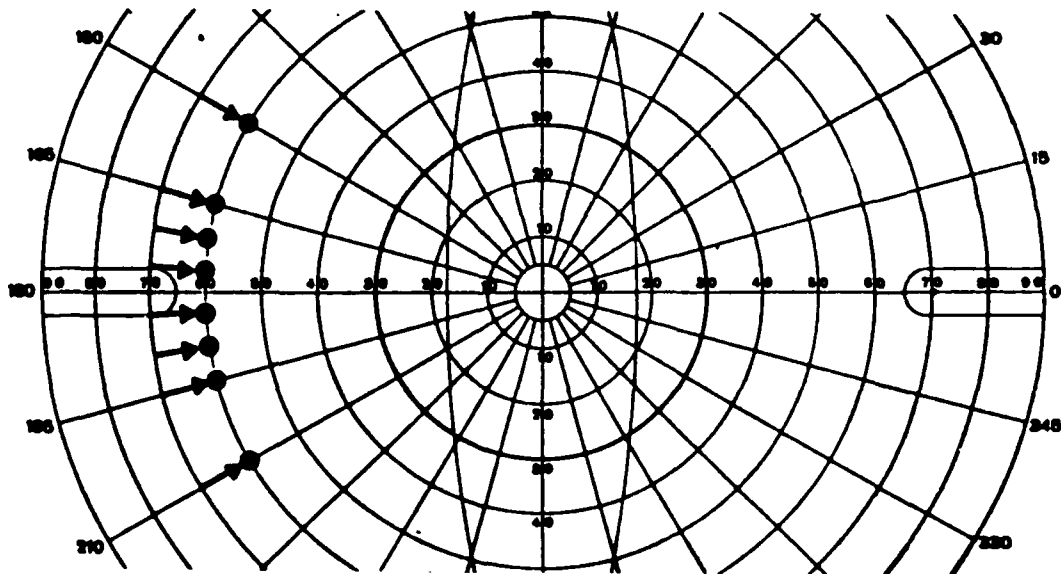


Figure 6

OS. (50)

4. Temporal sector defects

Use the same stimulus and kinetically search the temporal half of the visual field every 15° (Fig. 7). Then statically search within the temporal field for areas of depression.

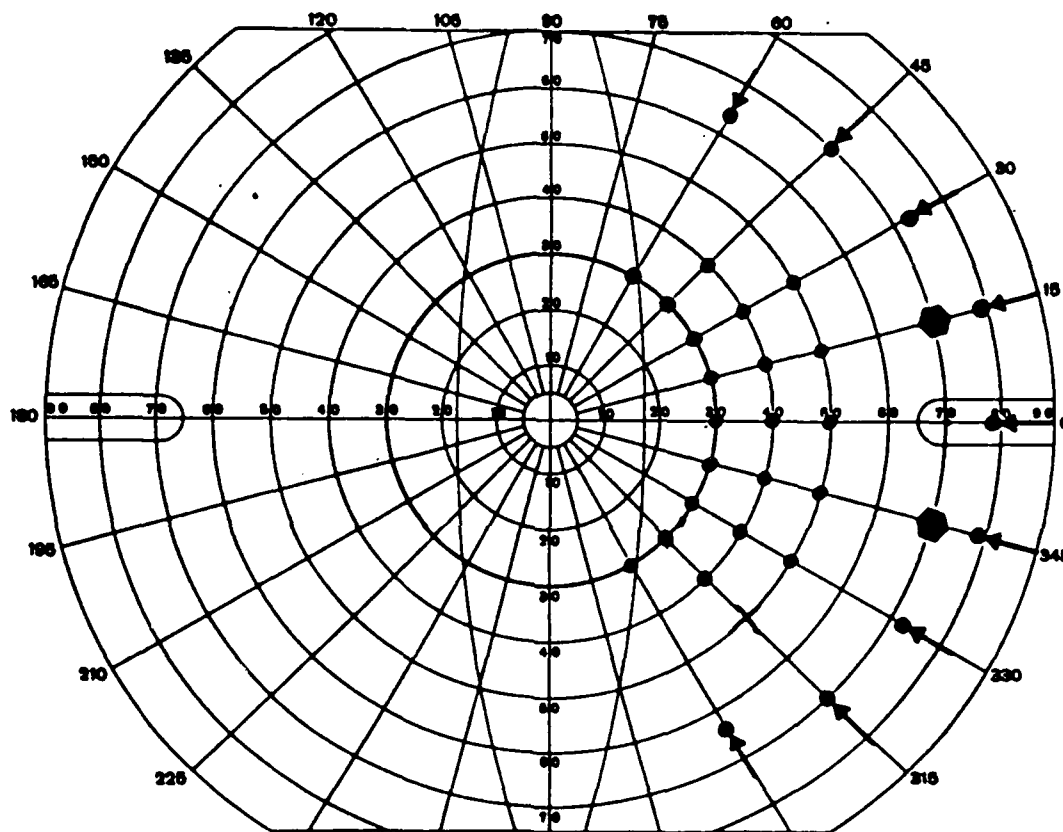


Figure 7

os. (50)

IV. Figure 8 is a completed visual field.

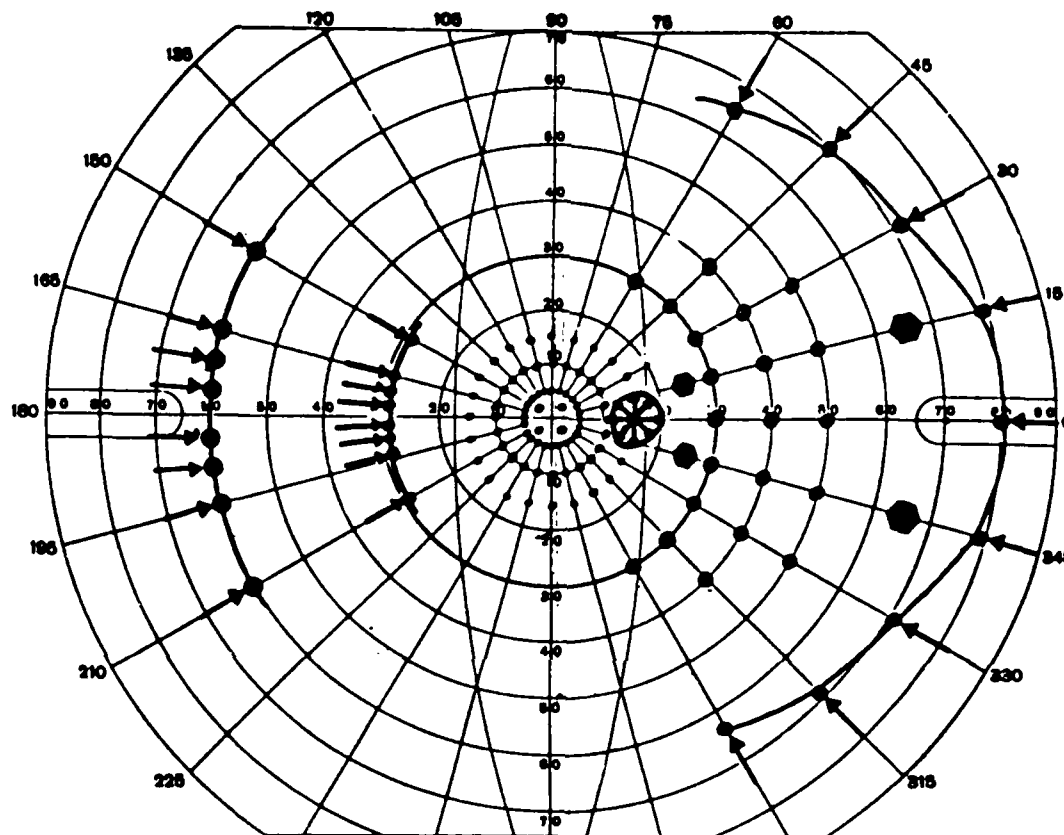


Figure 8

os. (00)

"It's not the sword; It's the swordsman."

"The only thing an ophthalmology resident learns less about
in his training than refraction is perimetry."

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